Dentomaxillofacial Radiology (2012) 41, 340–341

http://dmfr.birjournals.org

CASE REPORT

Sinonasal cavernous haemangioma: a case report

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Cavernous haemangiomas arising in the paranasal sinuses are very rare. Even though the lesion is benign in nature, its imaging features are non-specific, leading to an incorrect pre-operative diagnosis in most patients. We present a case of a maxillary sinus cavernous haemangioma in a young male. The clinical presentation and imaging characteristics of this entity are reviewed. *Dentomaxillofacial Radiology* (2012) **41,** 340–341. doi: 10.1259/dmfr/89601569

Keywords: cavernous haemangioma; maxillary sinus

Case report

A 24-year-old male presented with a 1-year history of nasal obstruction and rhinorrhoea. He had previously been diagnosed with sinusitis and received multiple courses of antibiotics with only partial improvement of his symptoms. Medical history included childhood asthma and he was a non-smoker. At physical examination, a left-sided nasal mass was noted emanating beneath the middle turbinate with associated septal deviation to the right. Nasal endoscopy with biopsy of the left-sided nasal lesion was done and showed mucosa with acute and chronic inflammation. Fungal stain was negative and there was no evidence of malignancy. Upon referral to our hospital, CT and MRI were performed, revealing a left maxillary sinus mass extending to the nasal cavity associated with sinus bone erosion and expansion (Figure 1). On CT, the lesion had slightly high density and on MRI it showed a central portion of low T_2 and high T_1 signal surrounded by enhancing and multilobulated mucosa (Figure 2). Our differential diagnoses included inverted antrochoanal polyp or less likely chronic sinusitis, probably containing fungus and/or dehydrated central secretions.

The patient underwent a left maxillary antrostomy, total ethmoidectomy and sphenoidotomy, and surgical pathology reported a cavernous haemangioma with multifocal intraluminal organizing thromboses, stromal haemosiderin deposition and fibrosis and mild-to-moderate chronic inflammation. Post-operatively, he was seen in the emergency room twice for epistaxis and cauterized with complete bleeding resolution. He is presently asymptomatic.

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Received 9 November 2010; revised 16 February 2011; accepted 6 March 2011

Discussion

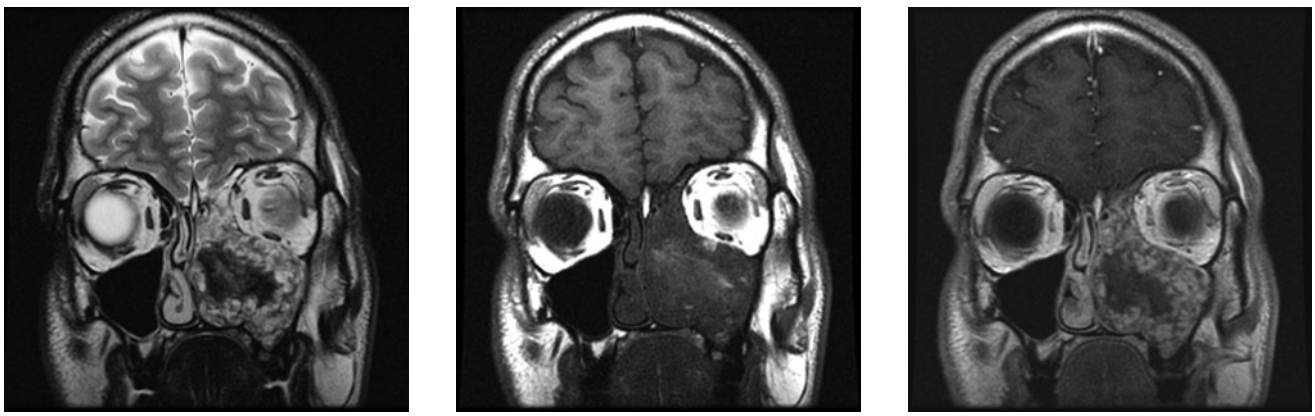
Haemangiomas are the most common vascular malformation in the head and neck; however, sinonasal haemangiomas are rarely seen.[1] They can arise from osseous, mucosal or submucosal tissues of the nasal cavity or sinuses. Both capillary and cavernous type haemangiomas have been described; nevertheless, most sinonasal haemangiomas are of the capillary type, occurring predominantly in children and arising from mucosal and submucosal tissues. Capillary haemangiomas usually arise in the nasal cavity from the nasal septum or vestibule.[2,3]

Sinonasal cavernous haemangiomas are more common in adults. Compromise of the nasal cavity and less commonly of a sinus has been described.[3–5] Non-osseous sinonasal cavernous haemangiomas are believed to arise from the lateral wall of the nasal cavity or from the medial wall of the maxillary sinus.[6] Despite their site of origin, sinonasal cavernous haemangiomas commonly result in chronic epistaxis and nasal obstruction. Cheek swelling and proptosis can also be seen.

On CT, sinonasal cavernous haemangiomas are growing soft-tissue masses expanding air-containing spaces. They emerge from or grow into the maxillary sinus in most cases. Usually they produce benign-appearing bone changes with secondary expansion and thinning of bone structures.[7] As they grow, they can compromise the ethmoidal, sphenoidal sinus and/or nasal cavity, causing nasal septal deviation, compression of orbital structures and post-obstructive changes. Less frequently, cavernous haemangiomas cause significant bone destruction, making it difficult to tell them apart from other lesions, including malignant tumours.[8] Their contrast enhancement pattern is non-homogeneous owing to the presence of areas of bleeding and necrosis.[5] Only a few case reports

a b c

Figure 1 CT images without contrast, (a) axial soft-tissue window, (b) bone window and (c) coronal bone window show a large soft-tissue mass occupying the left maxillary sinus and extending into the nasal cavity. The mass is associated with remodelling of the posterior wall of the left maxillary sinus, inferior orbital wall and nasal septum as well as erosion of the medial maxillary sinus wall. On the soft-tissue view (a), the lesion contains zones of high density



a b c

Figure 2 (a) Pre-contrast T_2, (b) T_1 and (c) post-contrast T_1 MR images show a heterogeneous signal intensity mass (low T_2 and high T_1 centrally) centred in the left maxillary sinus with peripheral enhancement suggesting thick corrugated mucosa

regarding their appearance on MR are available, describing them as predominantly hyperintense on T_2 and otherwise heterogeneous in all other sequences.

Catheter angiography may be useful to delineate these lesions and for pre-operative embolization[5] and surgical planning.

Differential diagnoses of sinonasal cavernous haemangiomas include long-standing sinonasal polyps, mucocele and inverted papillomas, and if there is associated bone destruction it may simulate a malignant tumour.

In conclusion, cavernous haemangiomas are an uncommon benign entity of the sinuses. Owing to the fact that their appearance on imaging is not specific, they can be confused with other benign diseases or with malignant pathology. Nonetheless, it is important for the radiologist to include this entity in the diagnostic work-up of sinonasal masses requiring a high index of suspicion in the setting of chronic nasal obstruction and repeated epistaxis. Prompt suspicion and identification of this disease can guide further patient management.

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